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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,385	09/16/2003	Takashi Ohira	Q77491	2169

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EXAMINER

BERMAN, SUSAN W

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 02/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/662,385	Applicant(s) OHIRA, TAKASHI	
	Examiner Susan W. Berman	Art Unit 1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

The finality of the rejection of the last Office action is withdrawn upon reconsideration of the claims in view of the prior art. New grounds of rejection are set forth herein. Claim 3 is drawn to a golf ball having a coating obtained by curing a paint composition wherein the composition comprises an aqueous resin having photocurable functional groups, photoinitiator and crosslinker. Upon reconsideration, there is no evidence of record that the coating obtained differs significantly from a coating obtained by curing a composition comprising a non-aqueous resin having photocurable functional groups, photoinitiator and crosslinker because the water employed in the compositions of the instant invention is removed by drying before UV curing of the composition to provide a coating on the golf ball. Applicant reports comparative data in Table 1 in the specification, however, this data is not persuasive of unexpected results. The components of the compositions employed in the Comparative Examples are not clearly identified. Therefore, it is not known whether the comparative examples are representative of the closest prior art. Furthermore, the components of the Examples according to the invention do not support the scope of the claim language.

Claim Objections

Claim 10 is objected to because of the following informalities: the crosslinker “2,2-bishydroxymethyibutanol-tris(3-(1-aziridiny)propionate)” should read “2,2-bishydroxymethylbutanol-tris(3-(1-aziridiny)propionate)”. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 1, 3-5, 7, 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Crast et al (6,146,288). Crast et al disclose golf balls coated with a UV curable clear coat composition. The composition comprises a low viscosity polyether acrylate, functional carbodiimide resin, a low viscosity urethane polyacrylate oligomer, and a photoinitiator. See Table 1. The composition is applied by spraying instead of from an aqueous base. However, the cured coating obtained is considered to anticipate the instantly claimed coating because the composition comprises components having acrylate photocurable groups and a carbodiimide crosslinker. The reason is that the coating is obtained by UV curing the reactive components disclosed by Crast et al and corresponding to those set forth in the instant claims.

Claims 1, 3-5, 7, 11 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Jin et al [US 2002/0016226]. Jin et al disclose golf balls coated with a UV cured coating. The UV curable compositions comprises a UV-reactive component, such as a urethane acrylate or polyester acrylate, polyfunctional aziridine and a photoinitiator. See [0021-0022], [0036] and Examples 2-4. The composition is applied by spraying instead of from an aqueous base. However, the cured coating obtained

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is considered to anticipate the instantly claimed coating because the composition comprises components having acrylate photocurable groups and a carbodiimide crosslinker. The reason is that any water in the compositions set forth in the instant claims is evaporated off before UV curing so that the coating is obtained by UV curing the reactive components corresponding to those disclosed by Jin et al.

Claims 3-8, 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Lutz (6,013,330). Lutz discloses golf balls coated with a UV cured production ink. The production ink composition comprises an acrylate-functional prepolymer, optional photoinitiator, and an adhesion promoting component having carboxylic acid functionality and polyacrylate monomers corresponding to applicant's crosslinker. See columns 5-9. Lutz does not teach aqueous composition, however, the disclosed adhesion promoting component would be expected to be inherently soluble in water by virtue of the water-soluble carboxylic acid groups. The composition is applied by pad printing instead of from an aqueous base. If solvent is used it is evaporated off before UV curing. The cured coating obtained is considered to anticipate the instantly claimed coating because the composition comprises components having acrylate photocurable groups, a crosslinker and a resin containing carboxylic acid functional groups. The reason is that any of the water in the compositions set forth in the instant claims is evaporated off before UV curing so that the coating is obtained by UV curing the reactive components corresponding to those disclosed by Lutz.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor et al (6,352,805) in view of Hamada et al (6,255,382). Taylor et al disclose photocrosslinkable water-dispersible latex compositions comprising a photoinitiator and multifunctional monomer for forming a protective overcoat. See column 3, line 48, to column 5, line 46. Polymer matte particles containing reactive functional groups, such as carbodiimide and aziridine, capable of crosslinking with the binder polymer, are taught in column 7, lines 24-36. Taylor et al teach urethane, polyester and acrylic resins having carboxyl groups from column 4, line 47, to column 5, line 46. Hamada et al disclose a coating composition for golf balls comprising a water-dispersed polyurethane resin and a carbodiimide crosslinker. The carbodiimide compounds recited in claim 9 are specifically taught (column 2, lines 63-66, and the Examples).

Taylor et al disclose photocurable latex compositions comprising an aqueous resin and photoinitiator but do not teach or suggest the carbodiimide crosslinking compound set forth in the instant claim. It would have been obvious to one skilled in the art at the time of the invention to substitute or add to the carbodiimide crosslinkers taught by Hamada et al for the polymer particles having carbodiimide functional groups in the compositions disclosed by Taylor et al. Taylor et al provide motivation by teaching that carbodiimide functional groups provide crosslinking of the carboxyl group containing resin. Hamada et al provide motivation by teaching that carbodiimides are preferred crosslinkers for polyurethane resins having carboxyl groups. One of ordinary skill in the art at the time of the invention would have been motivated to employ the carbodiimide compounds taught by Hamada et al by a reasonable expectation of crosslinking the binder polymer in the compositions disclosed by Taylor et al as being crosslinked by carbodiimide functional groups.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor et al (6,352,805) in view of Nealon et al (5,300,325). Taylor et al disclose photocrosslinkable water-dispersible latex compositions comprising a photoinitiator and multifunctional monomer for forming a protective overcoat.

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See column 3, line 48, to column 5, line 46. Polymer matte particles containing reactive functional groups, such as cabodiimide and aziridine, capable of crosslinking with the binder polymer, are taught in column 7, lines 24-36. Taylor et al teach urethane, polyester and acrylic resins having carboxyl groups from column 4, line 47, to column 5, line 46. Nealon et al disclose a primer coating composition for golf balls comprising a water-borne dispersion of acrylic resin and/or polyurethane resin and a polyfunctional aziridine. A preferred aziridine is trimethylol-propane-tris-(beta-(N-aziridiny)propionate. See column 3, lines 4-19.

Taylor et al disclose photocurable latex compositions comprising an aqueous resin and photoinitiator but do not teach or suggest the aziridnyl crosslinking compound set forth in the instant claim. It would have been obvious to one skilled in the art at the time of the invention to substitute or add the preferred aziridine crosslinker taught by Nealon et al for or to the polymer particles having aziridine functional groups in the compositions disclosed by Taylor et al. Taylor et al provide motivation by teaching that aziridine functional groups provide crosslinking for aqueous acrylic or polyurethane resins having carboxyl groups. Nealon et al provide motivation by teaching that trimethylol-propane-tris-(beta-(N-aziridiny)propionate is a preferred crosslinker for aqueous acrylic or polyurethane resins. One of ordinary skill in the art at the time of the invention would have been motivated by a reasonable expectation of crosslinking the binder polymer in the compositions disclosed by Taylor et al as being crosslinked by aziridine functional groups.

Conclusion

Carpenter (4,278,578) is cited for teaching aziridine crosslinkers for aqueous compositions comprising a carboxy-functional urethane polymer and a carboxy-functional acrylic copolymer.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan W. Berman whose telephone number is 571 272 1067. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571 272 1078. The fax phone number for the organization where this application or proceeding is assigned is 571 273 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SB
1/30/06


Susan W Berman
Primary Examiner
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